

In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claims 1-12 (canceled)Claim 13 (previously presented):

An apparatus for inserting medical instruments into a human head, comprising:  
a device configured to be fixedly positioned relative to a human skull, wherein the device configured to be fixedly positioned relative to a human skull is invisible under magnetic resonance imaging;

an instrument insertion channel movably connected to the device configured to be fixedly positioned relative to a human skull, wherein the instrument insertion channel is invisible under magnetic resonance imaging;

a means for determining the relative position of the instrument insertion channel with respect to the device configured to be fixedly positioned relative to a human skull such that once the position of the device configured to be fixedly positioned relative to a human skull is known the position of the instrument insertion channel is known;

at least three positioning markers fixedly positioned with respect to the device configured to be fixedly positioned relative to a human skull, wherein the positioning markers can be distinguished from one another by magnetic resonance imaging, wherein the position of the device configured to be fixedly positioned relative to a human skull can be determined by monitoring the at least three positioning markers under magnetic resonance imaging such that the position of the instrument insertion channel can be determined via the means for determining the relative position of the instrument insertion channel with respect to the device configured to be fixedly positioned relative to a human skull; and

a means for showing a virtual image of the instrument insertion channel in a magnetic resonance image of the human head.

Claim 14 (new):

The apparatus according to claim 13, wherin at least one of the at least three positioning markers comprises a coil.

Claim 15 (new):

The apparatus according to claim 13, wherein at least one of the at least three positioning markers comprises a volume filled with a material positively or negatively identifiable under magnetic resonance imaging.

Claim 16 (new):

The apparatus according to claim 13, wherein one of the at least three positioning markers comprises a titanium screw.

Claim 17 (new):

The apparatus according to claim 13, wherein at least one of the at least three positioning markers are within the device configured to be fixedly positioned relative to a human skull.

Claim 18 (new):

The apparatus according to claim 13, further comprising at least three additional positioning markers fixedly positioned with respect to the instrument insertion channel,

wherin the means for determining the relative position of the instrument insertion channel with respect to the device configured to be fixedly positioned relative to a human skull comprises:

the at least three positioning markers fixedly positioned with respect to the device configured to be fixedly positioned relative to a human skull, and

the at least three additional positioning markers fixedly positioned with respect to the instrument insertion channel.

Claim 19 (new):

The apparatus according to claim 18, wherein at least one of the at least three additional positioning markers fixedly positioned with respect to the instrument insertion channel comprises a coil.

Claim 20 (new):

The apparatus according to claim 18, wherein the at least three additional positioning markers fixedly positioned with respect to the instrument insertion channel comprise optically active or optically reflecting positioning markers.

Claim 21 (new):

The apparatus according to claim 19, wherein the at least three positioning markers fixedly positioned with respect to the device configured to be fixedly positioned relative to a human skull are distinguishable from the at least three additional positioning markers fixedly positioned with respect to the instrument insertion channel.

Claim 22 (new):

The apparatus according to claim 21, wherein the at least three positioning markers fixedly positioned with respect to the device configured to be fixedly positioned relative to a human skull and the at least three additional positioning markers fixedly positioned with respect to the instrument insertion channel correspond to a different codification.

Claim 23 (new):

The apparatus according to claim 13, wherein the means for determining the relative position of the instrument insertion channel with respect to the device configured to be fixedly positioned relative to a human skull comprises:

a means for measuring an azimuth angle that the instrument insertion channel makes with respect to an axis parallel to a plane of the element, and

a means for measuring a zenith angle that the instrument insertion channel makes with

respect to the plane of the element.

Claim 24 (new):

The apparatus according to claim 23, wherein the means for measuring the azimuth angle comprises a scaling on a top piece attached to the element, and

wherein the means for measuring the zenith angle comprises a scaling on the element.